

What is claimed is:

1. A foreign-atom-doped precipitated silica having a BET surface area of more than 300 m²/g and a maximum surface concentration of the foreign atoms of between 1·10⁻⁵ and 0.05 mmol/m².

5 2. The foreign-atom-doped precipitated silica of claim 1, wherein the foreign atom is selected from the group consisting of Al, Zr, Zn, Ti, P, Cr, V, Sc, Ga, In, Fe, Ag, Sc, Mn, Co, Ni, and Cu.

3. The foreign-atom-doped precipitated silica of claim 1, wherein the surface concentration of the foreign atoms lies between 1·10⁻⁴ and 1·10⁻³ mmol/m².

4. The foreign-atom-doped precipitated silica of claim 2, wherein the surface concentration of the foreign atoms lies between 1·10⁻⁴ and 1·10⁻³ mmol/m².

5. The foreign-atom-doped precipitated silica of claim 1, wherein the BET surface area is between 350 and 800 m²/g.

15 6. The foreign-atom-doped precipitated silica of claim 2, wherein the BET surface area is between 350 and 800 m²/g.

7. The foreign-atom-doped precipitated silica of claim 3, wherein the BET surface area is between 350 and 800 m²/g.

8. The foreign-atom-doped precipitated silica of claim 4, wherein the BET surface area is between 350 and 800 m²/g.

20 9. A process for preparing a foreign-atom-doped precipitated silica, which comprises adding a solution of foreign atoms in the form of organic or inorganic salts to an aqueous sodium silicate solution during addition of sulfuric acid to said aqueous sodium silicate solution.

10. The process of claim 9, wherein the foreign atoms in the form of their organic or inorganic salts are dissolved in the sulfuric acid that is to be added to the sodium silicate solution, and added.

5 11. The process of claim 9, wherein the addition of the foreign atoms in the form of their organic or inorganic salts takes place over the same period of time as the addition of the sulfuric acid.

12. The process of claim 10, wherein the addition of the foreign atoms in the form of their organic or inorganic salts takes place over the same period of time as the addition of the sulfuric acid.

10 13. The process of claim 9, wherein the addition of the foreign atoms in the form of their organic or inorganic salts takes place within the second half of the period of addition of the sulfuric acid.

15 14. The process of claim 10, wherein the addition of the foreign atoms in the form of their organic or inorganic salts takes place within the second half of the period of addition of the sulfuric acid.

15. The process of claim 9, wherein the foreign atoms are selected from the group consisting of Al, Zr, Zn, Ti, P, Cr, V, Sc, Ga, In, Fe, Ag, Sc, Mn, Co, Ni, and Cu, said foreign atoms being in the form of chlorides, nitrates, carbonates, oxides, hydroxides, oxychlorides, phosphates, oxyhydroxides, oxide sulfates, polycarbonates and/or sulfates.

20 16. The process of claim 10, wherein the foreign atoms are selected from the group consisting of Al, Zr, Zn, Ti, P, Cr, V, Sc, Ga, In, Fe, Ag, Sc, Mn, Co, Ni, and Cu, said foreign atoms being in the form of chlorides, nitrates, carbonates, oxides, hydroxides, oxychlorides, phosphates, oxyhydroxides, oxide sulfates, polycarbonates and/or sulfates.

25 17. The process of claim 9, wherein a sodium silicate solution is added simultaneously with the sulfuric acid and with the solution of the foreign atoms.

18. In a method of papermaking, the improvement comprising using the foreign-atom-doped silica of claim 1 as an additive.

19. In a method of making printable textiles or printable media, the improvement comprising using the foreign-atom-doped silica of claim 1.

5 20. In a method of making paper coatings or overhead films, the improvement comprising using the foreign-atom-doped silica of claim 1.